

IBM Software Demos Informix Dynamic Server HDR

<Show a Title Page: (Flash with the 3 clickable scenarios) Introduction>

In an 'On Demand' Enterprise, application outages are unacceptable. High availability of information has become increasingly important. Many organizations have internal or external Web applications that demand database servers are up 24 by 7. IBM's Informix Dynamic Server provides an enterprise solution called High Availability Data Replication, or HDR. This feature is designed to ensure database application availability in the event of either planned downtime or unplanned outages. High Availability Data Replication replicates data changes from a source, or primary database, to a secondary database, thereby maintaining a fault-tolerant replica. IBM's Informix Dynamic Server provides automatic failover and client redirection which makes application failover very quick and easy without requiring any additional hardware or software.

<Run the setup scenario>

With IBM's Informix Dynamic Server, setting up and managing HDR is an easy and straightforward process.

After the primary database server is established and the secondary database server is configured, a backup of the primary database is made. The secondary database is restored from the backup of primary database to establish the baseline necessary to begin replication.

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Next, HDR is configured on both the primary and secondary database server. HDR is started by issuing two simple 'onmode' commands, one on the secondary server and the other on the primary servers. This causes the secondary database to enter a 'SYNC UP' phase. During the SYNC UP phase any data changes made to the primary database after the backup was created are applied to the secondary database. While HDR is set up, the primary server is online and clients can be accessing and updating data.

Upon completion of the sync up phase, the secondary database is current to the primary database and HDR is operation. The secondary server begins receiving data changes as records are updated on the primary. After HDR is operational, the secondary server is available for read-only queries. This READ-ONLY secondary database server is now ready to take over and become the primary if an outage occurs.

To achieve load balancing, non-data critical applications can be run on the secondary server to reduce the load on primary server. Applications like report generation and Web viewer applications, such as online retail applications, can access data from the secondary server.

< Unplanned outage scenarios)>

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High Availability Data Replication offers automatic switch-over functionality in case of outages. When the primary database server becomes unavailable due to an unplanned outage, such as a power failure, the secondary server will take over and start operating in full access mode. Clients will connect to the standalone (or old secondary) server and perform updates to the database. Automatic client rerouting seamlessly connects clients to the standalone server during an outage to avoid any interruption in service. In this case, downtime is a matter of seconds.

After an outage is restored, the original primary server is re-started. After restarting, the primary server establishes the connection to the current standalone server. This negotiation process continues HDR with the current standalone server in primary mode and the restarted server in secondary mode. The restarted server enters into a sync up phase. During the sync up phase all updates are received that were made to the standalone server during the outage. After sync up the HDR pair again becomes operational with the role of the two servers reversed.

Automatic failover greatly reduces the cost of system administration and the need for user intervention during unplanned outages. With automatic switch-over and automatic client redirection, the 'failover' process is seamless to the user.

< Planned outage scenarios)>

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When using IBM Informix Dynamic Server's HDR feature, hardware or OS maintenance can be performed without having to schedule application downtime. Maintenance can be performed on the system that holds the secondary server.

In this example, an OS patch is required on the system hosting the primary server. The secondary system switches into the role of standalone primary server. Bringing the primary server down, automatic failover feature converts the secondary into standalone primary server. Automatic client redirection will connect all clients to the standalone system.

Hardware and/or software maintenance can then be performed on the system that holds the original primary server, while clients continue accessing the database from the primary server.

After the maintenance is complete, the down server can be brought up again and takes the role of secondary server. The secondary server will connect to the current primary server and enters into sync phase. It receives any updates that were made on the primary database while maintenance was being performed. After the sync up phase is complete on the secondary server, the HDR pair becomes operational again.